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## PATENT ABSTRACTS OF JAPAN

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(54) BEVERAGE FOR HEALTH

(57)Abstract:

PURPOSE: To provide a beverage for health which comprises dried cell bodies of photosynthetic bacteria, thus vitalizes aged people, refreshes their complexion, prevents heart failure, cerebral-infarction, cancer or the like, namely excellent in senility prevention.

CONSTITUTION: This beverage for health comprises dried cell bodies or the culture mixture of photosynthetic bacteria, for example, in Ectothiorhodospira or Rhodospirillum or their mixture of one or more kinds. It is preferred that the dose of dried cell bodies is 0.1-0.2g/day and the culture mixture of about 10<sup>9</sup>cell/ml is 3-5ml/day.

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**Claim(s)]**  
**Claim 1]** The eating-and-drinking article for health characterized by consisting of an eating-and-drinking article which mixed with the dried cell of a photosynthetic bacterium, media, or these at least one sort.

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### Detailed Description of the Invention]

**0001]**  
**Industrial Application]** For the reason for elderly people's health, this invention relates to the eating-and-drinking article for health which consists of an eating-and-drinking article which mixed with the dried cell of a photosynthetic bacterium, media, or these at least one sort especially not to mention ordinary persons.

**0002]**  
**Description of the Prior Art]** Our country is a problem with serious low birthrate and longevity, and especially elderly people's everyday health care administration serves as a big social problem in recent years. On the other hand, although various kinds of health food, such as chlorella and an aloe, is marketed, and it is used widely now, and all demonstrate a certain amount of effect, it is the present condition which is much the same and does not not much have becoming better for the change.

**0003]**  
**Problem to be solved by the invention]** This invention aims at offering the eating-and-drinking article for health which is useful to hold elderly people's everyday good health condition on many sides using the substance which holds unique nutrition and a physiological function.

**0004]**  
**Means for solving problem]** [ this invention person does research on a photosynthetic bacterium over many years, and establish much patents in use to the high concentration organic-waste-water processing method for having used the photosynthetic bacterium by today, food feed and its directions, and other agriculture, forestry and fishery industries etc. and / with these ] although the great result is mentioned In the meantime for this invention person's own health care administration as an experiment on a human body of photosynthetic-bacterium use A photosynthetic-bacterium medium is regularly used for this invention person itself every day, and, on the other hand, the nutrition physiology elucidation of a photosynthetic bacterium is studied, these results obtain the firm belief which can perform prevention of the cerebral infarction which is elderly people's concerns, heart failure, hepatitis, cancer, etc. by daily use of a photosynthetic-bacterium medium, and it came to complete this invention.  
**0005]** That is, this invention is an eating-and-drinking article for health characterized by consisting of an eating-and-drinking article which mixed with the dried cell of a photosynthetic bacterium, media, or these at least one sort a family ] although the family of this invention person and this invention person puts 500ml of photosynthetic-bacterium media into a container, always places on a table, puts in about 5ml 180ml of white distilled liquor, or into milk or 180ml of tea and drinks it from about 30 or before every day For this reason, have not suffered from the

ness of those other than all families and cold, and this invention person and the liver disease of many years [ for is reason ] recover completely. Furthermore, it is also considered to be based on daily use of a photosynthetic bacterium also at the time of the cerebral infarction started since the inside of scorching heat was worked to some years ago, without drinking water, by diagnostic inspection of a medical specialist in a university hospital, although must completely be the condition of general paralysis, there was no paralysis of hand and foot and stopped only a light speech impediment.

0006] The knowledge about the nutrition physiology of a photosynthetic bacterium is as general nutritional formation showing in Table 1 and 2. It is a high protein very much, and many precious things, such as B12, folic acid, and a biotin, are contained overwhelmingly [ else ], and the vitamin-B-group composition of it being effective prevention of the anemia by this, prevention of various obstacles, and metabolic promotion is also clear.

0007]

Table 1]

光合成細菌の菌体成分

|       | 粗蛋白質<br>(%) | 粗脂肪<br>(%) | 可溶化糖<br>質 (%) | 粗繊維<br>(%) | 灰分<br>(%) |
|-------|-------------|------------|---------------|------------|-----------|
| 光合成細菌 | 65.4        | 7.18       | 20.31         | 2.78       | 4.28      |
| クロレラ  | 53.7        | 6.31       | 19.28         | 10.3       | 1.54      |
| 米     | 7.5         | 0.94       | 90.60         | 0.35       | 0.72      |
| 大豆    | 38.9        | 19.3       | 30.93         | 7.11       | 5.68      |

0008]

Table 2]

光合成細菌のビタミンB群組成

|                 | 光合成細菌<br>( $\mu\text{g/g}$ ) | エッソネステル<br>SCP( $\mu\text{g/g}$ ) | トルラ酵母<br>( $\mu\text{g/g}$ ) | ブリュウバ<br>酵母 ( $\mu\text{g/g}$ ) |
|-----------------|------------------------------|-----------------------------------|------------------------------|---------------------------------|
| B <sub>1</sub>  | 12                           | 11 ~13                            | 2~20                         | 50~360                          |
| B <sub>2</sub>  | 50                           | 110 ~130                          | 50                           | 36~42                           |
| B <sub>6</sub>  | 5                            | 4.8~7.6                           | 45                           | 25~100                          |
| B <sub>12</sub> | 21                           | 0.11~0.17                         | —                            | —                               |
| ニコチン酸           | 125                          | 165 ~200                          | 350                          | 500                             |
| パントテン酸          | 30                           | 14 ~23                            | 100                          | 100                             |
| 葉酸              | 60                           | 1.8 ~2.4                          | —                            | 3                               |
| ビオチン            | 65                           | 0.1 ~1.6                          | —                            | —                               |

0009] Furthermore, as shown in Table 3, the content of the carotinoid and the ubiquinone which make a role important for human body intracellular electric power transfer is remarkably high as compared with other living organizations. As for the carotinoid of a photosynthetic bacterium, most of especially ubiquinones, such as spirilloxanthin (SUPIRIROOKIZANCHIN) and Spheroidene (SUFEROIDON), is an ubiquinone 10 (UQ10). Generation of the radical (radical machine) from which a side chain enters easily into a cell membrane, oxidizes by active oxygen within a mitochondrion, and becomes the trigger of the onset of a disease of illnesses (heart failure, cerebral infarction, cancer, etc.) in various kinds with long oiliness, respectively is eliminated, or it is solved that the depressant action of oxidization occurs.

0010]

Table 3]

ロドシュードモナス・スフェロイデスS株  
 $\mu\text{g}/\text{mg}$ 蛋白質

|            | 培養温度 10℃ | 培養温度 40℃ |
|------------|----------|----------|
| バクテリオクロフィル | 7.66     | 10.55    |
| カロチノイド     | 0.46     | 0.76     |
| ユビキノン      | 2.32     | 8.29     |

生) カロチノイド: スピリロオキザンチン、スフェロイデン、  
 スフェロイデイン、ロドビブリン、  
 ロドピン等

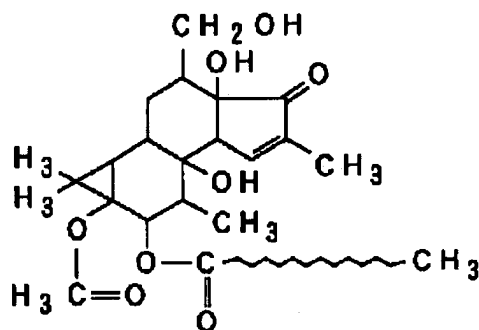
ユビキノン: 主としてUQ<sub>10</sub>がほとんどで、他にUQ<sub>8</sub>等

011] Moreover, white corpuscles kill a disease germ, and the operation which disappears is known further, and a foreign substance as a stimulating substance of this white corpuscle [ PMA (HORUBORU Millis Tait acetate) known with the following constitutional formula ] Proteinkinase C is activated by slight concentration, active oxygen (O<sub>2</sub>-) is produced, this PMA is a powerful promoter of carcinogenesis, and it is known that a mechanism of carcinogenesis and protein kinase are related closely (Table 4). In addition, the activation mechanism of white corpuscles was shown in drawing 1.

012]

Chemical formula 1]

### PMA



013] O<sub>2</sub> which stimulates white corpuscles and is guided by this PMA - It was investigated to production what kind of influence the ingredient of a photosynthetic bacterium has, and whether the photosynthetic bacterium itself could act as a stimulating substance of white corpuscles. as a result, all the cells of a photosynthetic bacterium, a phospholipid ingredient, a pigment component, and a water soluble polymer ingredient -- any -- as the stimulating substance of white corpuscles -- O<sub>2</sub>- [ the effect / the production effect is not accepted at all and ] O<sub>2</sub> in stimulus according to PMA on the other hand - To production, said each of photosynthetic-bacterium each ingredients showed the strong prevention effect (Table 5, Table 6, Table 7). This solved as showing that it is effective in a photosynthetic-bacterium ingredient controlling canceration of a cell.

014]

Table 4]

各種刺激物質による白血球の $O_2^-$ 産生

|                                     | $O_2^-$ 産生<br>(nmoles/3min · $10^6$ cells) |
|-------------------------------------|--|
| コントロール                              | 0  |
| PMA (50 $\mu$ M)                    | 7. 0                                       |
| FML P (50 $\mu$ M)                  | 3. 6                                       |
| PMA (50 $\mu$ M + FML P (1 $\mu$ M) | 17. 7                                      |
| アラギドン酸 (50h $\mu$ M)                | 2. 3                                       |

注) FML P : ホルミル・メチオニル・ロイシン・フェニルアラニン

015]

Table 5]

光合成菌体水溶性成分の白血球 $O_2^-$ 産生に対する効果

| 菌体成分            | $O_2^-$ 産生        |                    |
|-----------------|-------------------|--------------------|
|                 | 50 $\mu$ M PMA 刺激 | 1 $\mu$ M FML P 刺激 |
| コントロール          | 6. 09             | 10. 15             |
| 高分子成分 1         | 0. 26             | 5. 82              |
| 高分子成分 $10^{-1}$ | 3. 70             | —                  |
| 高分子成分 $10^{-2}$ | 6. 88             | —                  |

(注) 菌体 5. 2 mg に相当する水溶性成分量を 1 とした。

016]

Table 6]

菌体の色素、非極性脂質画分の $O_2^-$ 産生に対する効果

| 色素・非極性脂質<br>(mg) 画分 | $O_2^-$ 産生<br>(nmoles/3min · $10^6$ cells) 菌体 |
|---------------------|---|
| 0                   | 4. 6  |
| $10^{-4}$           | 5. 6  |
| $10^{-3}$           | 3. 8  |
| $10^{-2}$           | 1. 2  |
| $10^{-1}$           | 0. 5  |

017]

Table 7]

菌体色素成分のO<sub>2</sub>-産生に対する効果

| 色素成分           | 添加濃度 (μM) |     |     |     |
|----------------|-----------|-----|-----|-----|
|                | 0         | 2   | 20  | 200 |
| バクテリオ・クロロフィル a | 8.0       | 7.8 | 6.6 | 1.1 |
| スピリル・オキザンチン    | 8.0       | 8.1 | 7.4 | 4.4 |
| リコペン           | 8.0       | 6.3 | 4.1 | 0   |
| ロドビブリン         | 8.0       | 7.4 | 1.0 | 0   |

(注) 産生数値は nmoles/3min・10<sup>6</sup>cellsである。

[018] Moreover, the photosynthetic bacterium is used as an additive of poultry farming-feed now. Usually, if a photosynthetic bacterium is paid to the culled chicken to which it carried out keeping on a laying-eggs rate breaking 70% by an one-piece year grade for 70% or more of laying eggs like native chicken (wild bird) for three years or more possible, and the laying-eggs rate usually fell with feed for this reason 70% or more of laying eggs is attained about one week, and it is checked that texture is also rejuvenated. When this invention person also uses regularly for 30 years, it is checking like a hen that there is an effect also in aging prevention besides sick prevention.

[019] Furthermore, it is proved by the research over tens of years that PUROTOPORIFIRIN shows the carcinostatic effect in early stages of oncogenesis. on the other hand -- interferon (IF) -- as the inducer of immunity in the early stages of oncogenesis -- that is, It is reported that a carcinostatic operation is shown as a factor before immunity, and it traced that a photosynthetic bacterium mass-produced coprocessor poly FIRIN similar to this PUROTOPORIFIRIN by cultivation, and experimented in how this gives change to interferon production. In the side IF of blood, the result checked that IF value was reinforced by internal-organs IF peach coprocessor administration, as shown below.

[020]

血中 I F の試験

I F 単位

|        |       |     |
|--------|-------|-----|
| 対照群    | 2時間血清 | 53  |
| コプロ投与群 | 2時間血清 | 235 |

the experiment method: Pure strain male mouse The weight of 20g was used.

the 1st group Ten animals (after-the-birth one-month oral administration)

the 2nd group Ten animals (coprocessor poly FIRIN 5gamma / mouse 1 month oral administration)

[021]

臓器 I F の試験

|    | 対照群 | コプロ処理群 |
|----|-----|--------|
| 肺  | <10 | <10    |
| 脾  | 77  | 260    |
| 骨髓 | <10 | 20     |
| 肝  | <10 | <10    |

[022] As a photosynthetic bacterium used for this invention, for example The EKUTOCHIORODOSU pillar (Ectothiorhodospira) group of the department of EKUTOCHIO loss PIRIESHIE (Ectothiorhospriaceae), They are fixed stocks, such as a RODOSUPIRAMU (Rhodospirillum) group of the department of RODOSUPIRIAESHIE (Rhodospirillaceae), the Rhodopseudomonas (Rhodopseudomonas) group, and a RODOBKUTA (Rhodobacter) group.

[023] In preparing the medium of this, medicine adds 1st phosphoric acid Cali 0.8g, 0.5g of ammonium sulfate,

0.2g of magnesium sulfate, Salt 0.2-0.5g, and 10-20mg of yeast extract as nutritive salts etc. in 1l. of media, using a pure article more than a food additive as a common necessary condition. Moreover, the inside 2-3g of 1l. of medium tap water is used for the organic compound as a main carbon source using malic acid sodium and a sodium glutamate using sodium acetate, sodium propionate, and butanoic acid sodium, respectively. Since it adjusts to pH 0-9.1 especially in the case of Ectothiorhodospira and further high-concentration salts are liked, salt concentration raised to about 1 to 3%, and growth will be promoted, if 1-2mg adds and VB12 are cultivated among 1l.

However, it is not necessary to make it a high salt in particular about other groups, and growth will be promoted, if it is also corrected and carries out fold amount addition of the yeast extract about by 7.0 to 8.0.

[024] The above strain performs single cultivation, respectively, and loose ventilation churning [some aerobic conditions and 0.2-0.5 ppm of DO(s) (dissolved oxygen)] is performed on optical conditions (light condition), it mixes and all culture conditions create mixed culture liquid, after performing cultivation at 25-30 degrees C for about 70 hours. Usually, this mixed photosynthetic-bacterium medium concentration is 109 in 1ml. It is a \*\* grade. In order to obtain this dried cell, although spray dry is inexpensive, as for frieze DODORAI, an excellent article is usually obtained further.

[025] Next, in the case of a dried cell, the amount used makes it a day in 0.1-0.2g /every day, and 3-5ml/day medium Ha of said concentration is a proper quantity. About the safety of a photosynthetic bacterium, as mentioned above, it is proved with the operation result of this invention persons' about 30 year, and also it is proved to the use of the food feed of 30 odd years etc. that there is no accident till today. Furthermore, when anxious about mixing of the various germs in the case of using a medium, it heat-sterilizes, or if it mixes and uses for the rate of media 5-10 of the white distilled liquor 100 with an alcoholicity of 20-30 degrees, it will also become sterilization of various germs, and the taste also becomes soft and mild with a photosynthetic bacterium, and there is a double effect.

[026]

Working example] Next, the work example of this invention is given and explained.

Work example 1) An asthma attack stopped almost occurring in about three months, as a result of creating 200g of mixings mixed with glucose so that the parents of childhood asthma may be asked and a child may tend to use the freeze paste cell (80% of moisture) which carried out the centrifugal harvest, and using 1g every day.

Work example 2) When it was troubled by hepatitis for years, and both this invention person's friend husband and wife were requested, sent a photosynthetic-bacterium medium and made 3-5ml drink every day, condition of disease improved gradually and it stopped almost sensing pain in several months.

[027] (Work example 3) When it was suffering from diabetes, and the friend of this invention person's Taiwan is requested, sends a photosynthetic-bacterium medium and makes 3-5ml drink every day, condition of disease improves by the continuous use for about two months, and it has quoted still now.

Work example 4) As a result of having been troubled by hepatitis, requesting the woman of this invention person's acquaintance's office, sending 100g of dried cells and using about 0.5g every day, brightness came out and the amber complexion also became healthy.

[028] The result of having mixed with the friend of this invention person's chronic hepatitis with 2-3g milk every day, and having drunk the photosynthetic-bacterium spray dry cell for about six months to him, (Work example 5) GOT (glutamic-acid oxaloacetic acid transaminase) 85 to 90 unit, A 74 - 120 unit \*\*\*\*\* thing becomes GOT 30-5, 20 to GPT32 unit, and a normal value, also after that, uses regularly, and GPT (glutamic-acid pyruvic acid transaminase) holds normal GOT and a GPT value.

[029] (Work example 6) [ the acquaintance of this invention person who is suffering troubles by dietary therapy or diabetes ] The result of having mixed the photosynthetic-bacterium medium with 3-5ml white distilled liquor every day, and having made it drinking (to inside of 100ml of 20 to 21-degree white distilled liquor), 2 hours after drinking at the beginning in about three months 170 mg/dl (blood sugar level which drank and measured 75g/dl and grape sugar liquid) at the time of hungry, the 240 blood sugar levels fall to 96 mg/dl and 110 mg/dl after 2 hours, respectively, use regularly still now, and the normal value is held.

[030]

Effect of the Invention] By using a photosynthetic bacterium regularly by this invention, the vital force can come

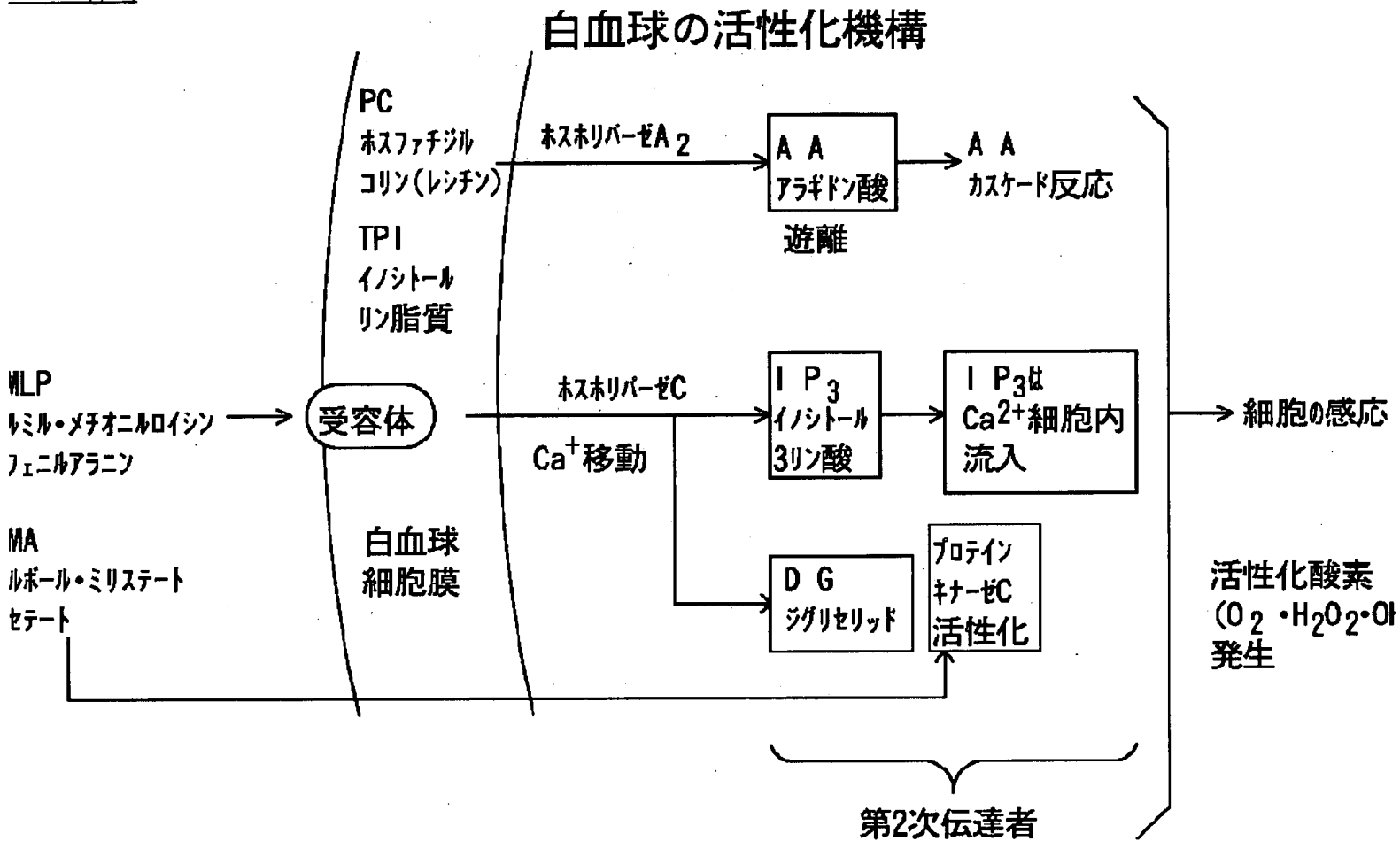


it, a complexion can also shine, and elderly people can also prevent the onset of a disease of the elderly-people  
sease with a difficult therapy of heart failure, cerebral infarction, cancer, etc., and can also prevent aging further.

Brief Description of the Drawings]

Drawing 1] It is the explanatory view of the activation mechanism of white corpuscles.

Drawing 1]



Translation done.]